12. TROUBLESHOOTING

A) IGNITION MODULE DIAGNOSTICS
The LED located on the ignition module (see Figure 10) will flash ON for ¼ second, then OFF for ¼ second during a fault condition. The pause between fault codes is 3 seconds.

<table>
<thead>
<tr>
<th>LED Indication</th>
<th>Error Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steady On</td>
<td>Internal Control Failure</td>
</tr>
<tr>
<td>2 Flashes</td>
<td>Flame Sense Fault</td>
</tr>
<tr>
<td>3 Flashes</td>
<td>Ignition Lockout</td>
</tr>
</tbody>
</table>

B) FLAME SENSOR TESTING
The flame current is the current that passes through the flame from the sensor to the ground. The minimum flame current necessary to keep the system from lockout is 0.7 microamps. To measure the flame current, connect an analog DC microammeter to the FC- and FC+ terminals per diagram. The meter should read 0.7 µA or higher when the burner is running full on. If the meter reads below zero, the meter leads are reversed. Disconnect power and reconnect the meter leads for proper polarity.

C) SPARK ELECTRODE INSPECTION
1. Inspect the spark electrode for possible cracks in the ceramic insulator. Replace if necessary.
2. Check for proper electrode spark gap. This should measure 1/8”. Re-bend to correct gap or replace electrode if necessary.
3. Check that the electrode ground rod is located to center of the burner port as shown in illustration. If electrode is misaligned, loosen the screws and nuts holding the electrode and reposition to correct location. Re-tighten screws and nuts.
<table>
<thead>
<tr>
<th>TROUBLE</th>
<th>POSSIBLE CAUSE</th>
<th>SOLUTIONS</th>
</tr>
</thead>
</table>
| Brooder is not glowing red... | ✷ The supply gas pressure is too low.  
✦ Improper size of gas piping.  
✦ The orifice is clogged.  
✦ Incorrect orifice size. | ✷ Check the manifold gas pressure and adjust if necessary.  
✦ If you are not sure of the performance, use the NFPA 54 gas pipe sizing table in these instructions.  
✦ Clean the orifice.  
✦ See the instructions for correct orifice size and replace if necessary. |
| Brooder will not attain the desired temperature... | ✷ There is insufficient heat in the building for heat loss (i.e., not enough brooders).  
✦ The thermostat sensing bulb is incorrectly placed.  
✦ The thermostat is out of calibration. | ✷ Conduct heat loss and add brooders or other source of heat as necessary.  
✦ Reposition as necessary for proper operation. **NOTE:** The sensing bulb should be shielded from direct radiation to prevent short cycling of the brooder.  
✦ Recalibrate (if possible) or replace. |
| Flames flaring up, outside of emitter surface... | ✷ The gas pressure is too high.  
✦ Incorrect orifice size.  
✦ Incorrect type of gas supplied to the brooder.  
✦ Not enough combustion air. | ✷ Check the manifold gas pressure and adjust if necessary.  
✦ See instructions for correct orifice size and replace if necessary.  
✦ Check the nameplate to identify the correct type of gas the brooder is equipped to operate using.  
✦ Clean the inside of the burner with a wire brush and blow out with compressed air. |
D) TROUBLESHOOTING CHART (Continued)

Turn up thermostat to call for heat. Does the electrode spark? NO

Does the module have a steady red LED? YES

Check the spark gap is 1/8"? NO

Replace ignition module, PN 30632030

NO

YES

Check building wiring and repair as necessary.

Is there 24V out from the transformer? (Zone control) NO

Is there 115V into the transformer? YES

Refer to broader zone control instructions for troubleshooting.

NO

YES

Check building wiring and repair as necessary.

Clean out office

Does the burner light? (Note: there are 3 tries for ignition before lockout) NO

Check the gas lines, are all the shut offs in the on position and have the lines been purged of air? YES

Turn on the shut offs and purge the pipe work of air.

NO

Turn on the gas valve.

Replace ignition module, PN 30632030

Replace gas valve PN 30753010.

Check the gas valve is it turned on.

Does the module have a steady red LED? YES

Is there 24V at the gas valve? NO

Check the office is it blocked.

NO

YES

Does the burner stay lit? NO

Check the flame current to the module see section 12. Is the current less than 0.25A? NO

Contact Dealer for further assistance.

YES

Contact Dealer for further assistance.

Replace ignition module, PN 30632030

Check that electrode ground rod is located in center of the burner port per section 12C.

Swap out the electrodes from a working burner, does it stay lit? NO

Check ignition cable does it have continuity? YES

Check the office is it blocked.

NO

Check the gas valve outlet pressure, see section 7a. Is the gas pressure correct? YES

Contact Dealer for further assistance.

NO

Clean out office

Replace electrode assembly, PN 30216060

Replace Ignition cable, PN 30634432

Burner operation trouble shoot ends